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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 101 of the	)	WT Docket No. 00-19
Commission's Rules to Streamline	)	
Processing of Microwave Applications in	)	
the Wireless Telecommunications Services	)	
	)	
Telecommunications Industry Association	)	
Petition for Rulemaking	)	RM-9418
	)	

To: The Commission

REPLY COMMENTS

NATIONAL SPECTRUM MANAGERS ASSOCIATION

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SUMMARY

Based upon the comments filed in response to the captioned Memorandum Opinion and Order and Notice of Proposed Rule Making, the Commission must:

- Adopt the proposed 23 GHz Band (i.e., 21.2-23.6 GHz band) wideband and narrowband channelization for the fixed point-to-point terrestrial microwave radio service ("FS").

- Adopt the proposed 23 GHz Band 1 bps/Hz spectrum efficiency and 0.001% frequency tolerance standards.

- Encourage antenna manufacturers to maintain adequate interference protection if the proposed standards permitting smaller diameter 23 GHz Band and 10 GHz Band (i.e., 10.55-10.68 GHz band) antennas are adopted. This would be accomplished by developing smaller antennas that provide the maximum suppression possible in order to allow assignment of more frequencies for use in congested areas.

- Withdraw the proposed elimination of antenna linear polarization standards.

- Aggressively pursue negotiations with the National Telecommunications and Information Administration to implement blanket 23 GHz Band conditional licensing.

- Adopt Local Multipoint Distribution System equipment self-verification and the other proposed technical criteria.

- Conclude that auctioning site-by-site FS bands is contrary to the public interest and should not be implemented.

- Promptly initiate a rulemaking for digital operations in support of High Definition Television.

These new rules clearly would provide needed spectrum for public safety, utility and broadband services. They would establish uniform operating standards to ensure spectrally efficient, economical, and state-of-the-art equipment. Given these public

interest benefits and the strong consensus reflected in the comments, the National Spectrum Managers Association ("NSMA"), which represents frequency coordinators nationwide, urges prompt Commission adoption of the foregoing rule revisions.

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To: The Commission

REPLY COMMENTS

In the above-captioned Memorandum Opinion and Order and Notice of Proposed Rule Making, 15 FCC Rcd 3129 (2000) ("NPRM"), the Commission proposes significant changes to the Part 101 rules governing the fixed point-to-point terrestrial microwave radio service ("FS"). These proposals primarily involve changes designed to facilitate more efficient, productive use of the 21.2-23.6 GHz band ("23 GHz Band"); improve access to the 10.55-10.68 GHz band ("10 GHz Band"); and promote flexibility in Local Multipoint Distribution Service ("LMDS") operating and technical rules.

Pursuant to Section 1.415 of the Commission's Rules,[1] the National Spectrum Managers Association ("NSMA"),[2] by its attorney, hereby replies to the comments[3] submitted on the NPRM.[4] As detailed herein, the record of this proceeding reflects the following positions:

- 23 GHz Band frequency plan -- The proposed 23 GHz Band frequency plan is widely supported and must be adopted. This plan will permit more efficient use of the 23 GHz Band. It will encourage use by wireless communications networks that need short-hop microwave links to interconnect with switching offices and the telephone network, to support the increased number of systems being used for wireless Internet access, and to ease the expansion of private microwave networks for voice and data transmission.

- 23 GHz Band operating criteria -- The proposed 23 GHz Band 1 bps/Hz spectrum efficiency and 0.001% frequency tolerance standards to accommodate increasing digital operations generally are supported and must be adopted. Some parties express concern that these rules are inappropriately biased against ongoing analog operations. These fears are unjustified because existing and proposed transition provisions will protect such operations. In addition, as detailed below, certain technical requirements could be relaxed after the transition period to protect analog operations on an ongoing basis.

- Antenna standards -- The record supports adoption of the proposed antenna standards so that 1-foot antennas could be used in the 23 GHz Band and 2-foot antennas could be used in the 10 GHz Band. In addition, the record supports adoption of corollary proposals to reduce

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[1]47 C.F.R. §1.415 (2000).

[2]The NSMA, established in 1984, is a voluntary association of individuals involved in the frequency coordination for FS, PCS and satellite earth stations. It supplements the Commission's coordination rules with procedural and technical recommendations developed in an open industry forum of coordinators, licensees and manufacturers. The NSMA's objective is to make the frequency coordination process more efficient and effective.

[3]A list of the parties submitting comments, and the abbreviations used herein to reference such comments, is set forth in Attachment A hereto.

[4]65 FR 38333 (June 20, 2000).

mainbeam gain and sidelobe suppression and to increase beamwidth. However, the Commission must be mindful that these proposed standards could increase the potential for harmful interference, especially in congested urban areas. To minimize this interference potential, the Commission must encourage manufacturers to develop the smaller antennas with maximum suppression capabilities.

- Antenna polarization -- The Commission must not eliminate horizontal and vertical antenna polarization standards. This proposed rule change was opposed unanimously because it would result in inefficient spectrum utilization and increased interference.

- 23 GHz Band conditional licensing -- The parties overwhelmingly want prompt implementation of blanket 23 GHz Band conditional licensing. It would allow more efficient operations by providing FS users greater flexibility in coordinating/consolidating construction projects and initiating service rapidly. The Commission and the National Telecommunications Information Administration ("NTIA") must make negotiations to achieve appropriate coordination procedures, so 23 GHz Band conditional licensing could be implemented, a top priority. Until blanket conditional licensing is implemented, or as an alternative thereto, several parties justifiably support Commission action that, at a minimum, would make such licensing permissible for all operations in that band that do not exceed a 55 dBm effective radiated power ("ERP").

- LMDS technical rules -- Widespread support exists for adoption of various suggested changes to LMDS operating and technical requirements. Permitting manufacturer verification of LMDS radios is unanimously approved because it would expedite product roll-out without compromising interference protection safeguards. Several parties agree with Alcatel's suggestion that the 1 MHz bandwidth used to measure out-of-band emissions for digital radios under Section 101.111(a)(2)(ii) of the Commission's rules (including those used in the LMDS) is not required to include any of the authorized channel bandwidth being tested. All these proposals should be adopted.

- Spectrum auctions -- All parties strongly oppose auctioning FS frequencies. They agree that it is the wrong method for authorizing systems consisting of one or more RF links, for authorizing individual links to complete existing systems, and for authorizing systems in shared bands (i.e., FS and satellite). Moreover, concern exists that the Commission inappropriately is using its mandate to implement auctions

as a tactic for transitioning FS users from site-to-site licensing to geographic-area licensing.

- Part 74 FS digital standards -- Various parties encourage the Commission to initiate a rulemaking for digital transmissions over Part 74 broadcast FS facilities to support High Definition Television ("HDTV") development. Without these rules, the studio-to-transmitter ("STL") links critical for HDTV could not be operated.

THE RECORD CLEARLY SUPPORTS ADOPTION OF THE PROPOSED 23 GHz BAND FREQUENCY PLAN AND ASSOCIATED TECHNICAL STANDARDS

Optimizing FS use of the 23 GHz Band is in the public interest. Its suitability for medium or high-capacity, short range systems, which serve as an essential backbone to evolving broadband technologies, make this band a viable alternative to the increasingly congested 6 GHz, 11 GHz, and 18 GHz bands for FS users.

A. 23 GHz Band Channel Plan Must Be Adopted

In the NPRM, the Commission proposes a 50 MHz channel plan for the 23 GHz Band.[5] It would consist of 50, 40, 30, 20, 10, 5 and 2.5 MHz wideband and narrowband channels.[6]

The record of this proceeding clearly indicates that significant additional "user friendly" FS spectrum is needed and that this channel plan must be adopted because it meets this objective. Winstar supports the proposed plan because it "will permit more efficient use of this band, as well as encourag[e] more use of the band for short-

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[5]NPRM, 15 FCC Rcd at 3161-62.

[6]Id.

haul [FS] users."[7] Comsearch concurs, stating that the proposed plan will enable operators to "license narrower channels for lower capacity links" and "will also encourage the development of more spectrally efficient radios to use the narrower channel widths."[8]

B. Operating Criteria

In the NPRM, the Commission proposes adoption of several operational changes to improve efficient use of the 23 GHz Band.[9] These changes include revisions to the Section 101.107 frequency tolerance and the Section 101.141 spectrum efficiency specifications.[10] Overwhelming support exists for those changes in the comments and therefore they must be adopted.

1. Frequency Tolerance.

Under Section 101.107, the frequency tolerance specification for the 23 GHz Band is 0.03%, which assumes analog production and coordination based upon full 50 MHz channelization.[11] The Commission proposed institution of a 0.001% standard.[12]

The record reflects that the current 0.03% specification clearly is outdated because FS radio manufacturers are licensing digital radios in this band, which occupy

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[7]Winstar at 8 (footnote omitted). See also FWCC at 6-8; NSMA at 6-7; API at 11.

[8]Comsearch at 4.

[9]NPRM, 15 FCC Rcd at 3161-62.

[10]Id.

[11]Alcatel at 11.

[12]NPRM, 15 FCC Rcd at 3162.

at least 75% of the channel bandwidth.[13] A tighter frequency tolerance standard (i.e., the proposed 0.001% instead of the current relaxed 0.03% standard) is needed to avoid excessive frequency drift into adjacent channels if the band is divided, as proposed, into bandwidths of 50, 40, 30, 20, 10, 5 and 2.5 MHz.[14] Frequency stability would improve from a drift up to 7 MHz with the current 0.03% standard to only 0.23 MHz with the proposed 0.001% standard.[15] Such an "improved stability requirement is necessary with the implementation of new frequency plans using channels as narrow as 2.5 MHz."[16] The proposed standard is essential to optimizing spectral efficiency in this band.[17]

Reduced consumer costs and increased manufacturer flexibility also would result with adoption of this specification.[18] Since most FS manufacturers design a family of radios for various frequency bands using common components and operating specifications, standardizing technical criteria, such as the 0.001% frequency tolerance requirement, would allow essentially the same radio to be used in different

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[13]NSMA at 8-9; FWCC at 8-9; Alcatel at 12; Consolidated at 1-2.

[14]Id.

[15]Comsearch at 5; Giganet at 4.

[16]Comsearch at 5.

[17]Comsearch at 5; NSMA at 9; FWCC at 9; Consolidated at 3; Giganet at 4.

[18]Alcatel at 12-13; NSMA at 9; FWCC at 9.

bands.[19] For example, the 0.001% frequency tolerance is used for other narrowband radio applications, particularly in the 18 GHz band.[20]

2. Spectrum Efficiency.

The 23 GHz Band is without a spectrum efficiency requirement. To fill this gap, the Commission proposed revising Section 101.141(a) to specify a 1 bps/Hz efficiency rate for the 23 GHz Band.[21] Like the proposed frequency tolerance change, support for this spectrum efficiency requirement was well-established in the comments.

The proposed spectrum efficiency standard is appropriate for existing and contemplated equipment. According to Giganet, "the current state of the art easily supports this level of spectral efficiency.[22]

Another reason for adopting the proposed spectrum efficiency standard is that it currently is used in all frequency bands below 19.7 GHz band and in the 24 GHz (24.25-25.25 GHz) DEMS band. Adoption of this standard thus would maximize spectrum utilization and facilitate manufacturing economies of scale."[23]

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[19]Alcatel at 12-13; NSMA at 9; FWCC at 9.

[20]Id.

[21]NPRM, 15 FCC Rcd at 3162.

[22]Giganet at 4. See also Comsearch at 5; Winstar at 8; Alcatel at 13-15; FWCC at 10-11; NSMA at 9-10.

[23]NSMA at 9-10; FWCC at 10-11; Alcatel at 13-15.

3. Transition Period.

Implementation of the new channel plan and the corresponding technical standards would impact FS equipment manufacturers and users. To ensure a smooth transition, the Commission established grandfathering provisions in Section 101.4 of its rules.[24]

Further clarification of how transition to compliance with certain Part 101 operating and technical standards still is needed, however. The Commission supplied such clarification in the NPRM. The "grandfathering" provision appropriately has been clarified to be effective "indefinitely."[25] Similarly, for the proposed changes to the 23 GHz Band, to minimize any adverse impact that the new rules would have on existing system licensees and on equipment manufacturers once they do become effective, the Commission proposed additional transition procedures.[26]

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[24]Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, Report and Order, WT Docket No. 94-148, 11 FCC Rcd 13449, 13477-78 (1996), recon., Memorandum Opinion and Order, 15 FCC Rcd 3129 (2000) ("Part 101 Order"). In the Part 101 Order, the Commission established Section 101.4, which sets forth a transition plan whereby FS licenses in effect as of July 31, 1996, could continue operating under Part 21 or Part 94 after Part 101 became effective. Id.

[25]NPRM, 15 FCC Rcd at 3147.

[26]Manufacturers would have an 18-month transition period before being required to meet applicable new frequency tolerance, spectrum efficiency, or other standards. NPRM, 15 FCC Rcd at 3160 n.191. In addition, within 24 months after the new rules become effective, users would be required to meet those technical requirements for new installations, but the proposed new antenna standards would be effective when the new rules become effective. Id. Under this 24-month transition procedure, FS stations applied for or licensed by the end of the transition period would be grandfathered indefinitely under the current rules, provided that these systems do not cause harmful interference to other licensees. Id.

These proposed improvements to the transition plan are supported generally and should be adopted without change.[27] The limited concerns discussed below, while reasonable, do not necessitate any substantive changes to the proposed transition plan.

First, API, which generally supports the proposed 23 GHz Band channelization and technical rule revisions, "cautions ... against making such tighter standards universally applicable ... until manufacturers have had adequate time to develop and introduce equipment that is capable of meeting the new standards."[28] API recommends a "transition period of at least several years" to allow licensees and users adequate time to continue using their existing equipment and to "indefinitely grandfather non-compliant systems that have been licensed before the end of the transition period."[29] The Commission's proposed changes to Section 101.4 are fully responsive to these concerns. Specific, reasonably timed compliance deadlines are proposed and all systems licensed before the deadlines would be grandfathered "indefinitely."

Telenetics/SMI articulated a more generic concern over what they perceive to be an unreasonable forced migration from analog to digital operations:

> Adoption of the proposals would drive up costs substantially and could force all systems to digital operation. Marketplace forces are at work that will eventually make digital operation cost-effective for all

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[27]NSMA at 5 n.10; FWCC at 6 n.10; Alcatel at 7 n.12.

[28]API at 11.

[29]Id. at 12.

applications, but it is currently not cost-effective in many instances, and it is premature to force that result by regulation.[30]

Moreover, they claim that the frequency tolerance and spectrum efficiency requirements would require discontinuance of analog product lines and initiation of digital products, which "would at least triple the price of the customer's product solution" and "would drive many existing users out of the market...."[31]

These concerns are valid. Changes to 23 GHz Band technical requirements should not compromise analog video. While some accommodation needs to be made for this mode, it is important that analog systems use no more bandwidth than is actually needed. Additionally, frequency tolerance of 0.03%, regardless of when the equipment is manufactured or the system is installed, is unacceptable because significant drift of up to +/-7 MHz at the 23 GHz Band would occur.[32] If 30 MHz analog systems can be designated for 0.003% frequency tolerance, the same can be done for 50 MHz analog systems. A 10-to-1 difference in stability for 50 MHz vs 30 MHz analog systems is not reasonable. Thus, a 0.003% frequency tolerance for analog systems should be permitted.[33]

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[30]Telenetics/SMI at 1.

[31]Id. at 2.

[32]See page 6, supra.

[33]In addition, certain parties, in their comments, propose rules designed to address these concerns. They suggested that analog systems should be required only to use a licensed video channel with necessary bandwidth instead of always using a 50 MHz channel. Alcatel at 11; NSMA at 7 n.15; FWCC at 8 n.15.

SUPPORT EXISTS FOR THE PROPOSED 23 GHz BAND AND 10 GHz BAND ANTENNA STANDARD MODIFICATIONS

To meet the needs of the PCS and other wireless users deploying systems nationwide and to comply with local zoning and other land use requirements, the Commission proposes amending its rules to allow smaller antennas in the 23 GHz Band and in the 10 GHz Band.[34] Further changes to the minimum antenna gain, maximum beamwidth and front-to-back ratios for these smaller-diameter antennas also are proposed.[35] Support exists for all these changes and thus they must be adopted.[36]

The NSMA is well aware of and understands the issues encountered when siting antennas in urban markets. Smaller antennas provide a number of benefits to an operator, including lower structure loading and the ability to make telecom sites more aesthetically pleasing. These factors could provide for increased use of the bands.

However, NSMA is concerned about the lowering of interference suppression standards proposed to coincide with the reduction in antenna size standards. This change could limit the growth of these bands in congested areas. Introducing antennas into a frequency congested environment with a larger beamwidth and poorer side lobe suppression may make it more difficult to assign frequencies in these bands.

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[34]NPRM, 15 FCC Rcd at 3164. For the 23 GHz Band, a 0.46 meter (18-inch) diameter for Category A antennas or a 0.30 meter (1-foot) diameter for Category B antennas would be permitted instead of the current 0.61 meter (2-foot) minimum prescribed in Sections 101.115 and 101.147(s) of the Commission's rules. NPRM, 15 FCC Rcd at 3164. Similarly, for the 10 GHz Band, a 0.61 (2-foot) diameter antenna, instead of the current minimum 1.22 meter (4-foot) diameter, would be permitted. Id. at 3164-65.

[35]Id., 15 FCC Rcd at 3164.

[36]Comsearch at 8; Giganet at 5; Telenetics/SMI at 7.

To minimize this risk, if the new standards are adopted, the Commission should encourage manufacturers in the 10 GHz Band and 23 GHz Band to develop smaller antennas that provide the maximum suppression possible in order to allow assignment of more frequencies for use in congested areas.

ANTENNA LINEAR POLARIZATION SPECIFICATIONS MUST BE RETAINED

Pursuant to Section 101.117 of the Commission's rules, "[u]nless otherwise allowed, only linear polarization (horizontal or vertical) shall be used."[37] The Commission, in the NPRM, proposes to remove the words "horizontal or vertical," which would allow systems with rotated linear polarization.[38] It justifies this proposal by concluding that "strict horizontal or vertical polarization is improbable for most billboard passive reflectors that we authorize."[39]

No support exists for this proposal. In fact, the only party addressing this issue, API, expresses its "concern that permitting rotated linear polarization on a widespread basis will create unnecessary coordination difficulties and threaten harmful interference to other licensed operations."[40] Indeed, abandonment of the vertical and horizontal ("V&H") linear polarization requirement would be disastrous and must not be

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[37]47 C.F.R. § 101.117 (2000).

[38]NPRM, 15 FCC Rcd at 3154.

[39]Id.

[40]API at 8.

implemented. Authorization of other polarization types in these bands, such as circular or elliptical, unnecessarily would increase the potential for interference.

Requiring V&H linear polarization has greatly facilitated efficient spectrum utilization. This result has been accomplished by increasing the density of FS systems licensed to operate in various designated bands by enabling engineers to take advantage of the benefits of cross polarization.

This requirement should be continued, but relaxed somewhat for area-licensed point-to-multipoint systems. Based upon the experience of NSMA members, some small amount of depolarization may occur, even on linear point-to-point microwave transmissions, sometimes requiring minor rotational adjustment of a receiving antenna at the time of installation to obtain optimum performance. When the same antenna is used for both transmitting and receiving, which is typically the case, this produces a small offset in the polarization of the transmitted signal from one of the point-to-point stations. This procedure has worked well under the existing rules, which require either vertical or horizontal linear transmitter polarization.

Area licensed point-to-multipoint systems typically communicate with numerous subscriber stations. These stations may or may not have line of sight access to the hub. Passive reflectors may be intentionally incorporated to extend coverage. With this type of system, a greater degree of depolarization may be expected in some cases. Therefore, in the situation of area licensed point-to-multipoint subscriber stations, strict adherence to V&H transmission requirements by subscriber stations may be counterproductive and some deviation on a station-by-station basis may be

appropriate. Hub station V&H requirements, however, must be maintained. For subscriber stations, it may be appropriate to operate on a linear polarization somewhat offset from V or H in order to optimize performance.[41]

23 GHz BAND CONDITIONAL LICENSING MUST BE PERMITTED

Timely availability of FS systems is essential to ensure that broadband technologies reach the widest possible marketplace. Conditional licensing is necessary for increased access to, and quick deployment in, the 23 GHz Band.

Inexplicably, the Commission has refused to pursue reaching the requisite agreement with NTIA to institute 23 GHz Band conditional licensing.[42] Such inaction is not condoned in the record. Unequivocal support for aggressively seeking such an agreement with NTIA is expressed throughout the comments, compelling the Commission promptly to pursue such negotiations until successful completion.

Giganet accurately details the rationale for adopting blanket 23 GHz Band conditional licensing:

> Manufacturers ... as well as customers are harmed by the time delays inherent in the current licensing process. This delay is due to the requirement for closed-door frequency coordination imposed by the Federal Government. Conditional licensing has been working successfully in other fixed microwave frequency bands because frequency coordination based on publicly available license databases is a highly

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[41]In addition, the Commission should craft its regulations to minimize the impact of intentionally misaligned subscriber transmitter antennas on adjacent area licensee hub receivers. In this regard, limited (less than 45 degrees) intentional misalignment of subscriber station transmitter antennas to optimize communications with the intended hub receiver may tend to lessen interference to unintended hub station receivers which are strictly following a V&H alignment pattern.

[42]NPRM, 15 FCC Rcd at 3158-60.

> reliable process. The Federal Government refuses to share its 23 GHz database with commercial frequency managers, and thereby imposes delays on commercial users, even though we believe the Federal Government accounts for only a small percentage of 23 GHz licensed links.
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> *****
>
> With existing procedures, commercial and local government 23 GHz users are deprived of immediate access, except on the four designated frequency pairs, because of the Federal Government's refusal to share frequency coordination data with the private sector. This is exactly the opposite of a fair sharing of burdens.[43]

In its comments, Winstar identifies other reasons for prioritizing an agreement with NTIA:

> [c]onditional licensing allows the microwave industry to operate more efficiently, as it provides licensees "greater flexibility in coordinating and consolidating construction projects." Moreover, the additional step of seeking an STA is eliminated.[44]

Comsearch fully supports authorizing this licensing tool for enhancing spectrum management and accelerating service commencement.[45] Telenetics/SMI characterize conditional licensing as a safe licensing procedure because the requisite successful completion of the private sector "coordination process is generally effective in ensuring protection of other users from interference," and there is every reason to conclude that

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[43]Giganet at 3.

[44]Winstar at 8-9 (citing Part 101 Order, 11 FCC Rcd at 13462). See also Consolidated at 1; Alcatel at 19-23; FWCC at 15-17; NSMA at 12-15.

[45]Comsearch at 3 ("fully supports the concept of including NTIA in the coordination process, and stands ready to cooperate with the Commission and NTIA/IRAC to implement the necessary procedures").

the same success would be achieved with the proposed NTIA-private sector coordination.[46]

This support cannot be ignored. It compels decisive Commission action in obtaining NTIA's cooperation. Under these circumstances, Alcatel emphasized in its comments:

> Failing to aggressively pursue negotiations with the NTIA for 23 GHz Band conditional licensing is unacceptable. The Commission must be held accountable for its lack of progress. Avoidance of this viable option to help FS users provide essential backbone support for broadband technologies and for public safety or utility services no longer can be tolerated, especially since support for this proposal in response to the Petition was nearly unanimous.
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> At a minimum, the Commission promptly must report publicly on the status of its negotiations, or lack thereof, with NTIA. A fast-track timetable must be established for the Commission to approach NTIA and commence serious discussions on this issue. Further, the Commission must provide representatives from the FS industry, from NSMA and other frequency coordinators, and from all remaining affected constituencies the opportunity to participate in these negotiations.[47]

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[46]Telenetics/SMI at 7.

[47]Alcatel at 22-23. See also NSMA at 14-15; FWCC at 16-17. Conditional licensing in the 23 GHz Band is permitted but only on an unjustifiably limited basis. In the NPRM, the Commission reiterated its determination that such licensing should be permissible only on the four (4) low power frequencies listed in Section 101.147(s) and only if the FS user would not operate with an ERP (the Commission appropriately proposes correcting its rules so that the maximum power standard is stated as EIRP, not ERP) greater than 55 dBm pursuant to Section 101.147(s). NPRM, 15 FCC Rcd at 3152-53. Several parties disagree with the Commission's interpretation. First, it is inconsistent with the specific text of Section 101.31(b). Second, imposing this arbitrary limit on the use of conditional licensing, so that it is available only to 23 GHz Band low-power channels, unnecessarily restricts access by FS users. Comsearch at 1-3; NSMA at 15-18; Alcatel at 23-26; FWCC at 17-20. Even if the Commission continues to ignore FS user needs and procrastinate in completing negotiations with NTIA for blanket 23 GHz Band conditional licensing, at a minimum, it must reverse position now and allow it on all frequencies in that band if the ERP (or EIRP) does not exceed 55 dBm. This decision clearly would serve the public interest because it supports critical applications by many industry users and expedites access to the band without any risk of harmful interference to government users because

LMDS TECHNICAL RULES MUST BE REVISED

In the NPRM, the Commission suggests revisions to various Part 101 LMDS technical rules.[48] These proposals include permitting manufacturers to self-verify LMDS radios instead of obtaining Commission certification, modifying out-of-band emission measurement standards, and relaxing other operating requirements.[49]

A. LMDS Transmitters Must Be Subject To Verification

The Commission proposes applying the same verification procedures to LMDS transmitters as it does to all other Part 101 radios.[50] The record requires adoption of this proposal.

Winstar states that "[t]here is no compelling reason to continue to require that these transmitters be subject to the certification process" and that self-verification "would permit licensees ... to more rapidly deploy their services."[51] Giganet concurs:

> The equipment developed for these services is similar or identical to equipment that is employed in other frequency bands that are subject to Verification. Moreover, point-to-multipoint equipment is employed only by licensees with area-wide licenses, and such licenses have the economic incentive both to make the best use of their licensed spectrum and to operate in compliance with FCC technical rules. Thus, licensees' procurement requirements and acceptance tests are likely to assure that the equipment is working according to Commission rules.[52]

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of the low ERP being used.

[48]NPRM, 15 FCC Rcd at 3156-58.

[49]Id. at 3157-58.

[50]NPRM, 15 FCC Rcd at 3157-58.

[51]Winstar at 7. See also Triton at 2-3; Alcatel at 29; NSMA at 19; FWCC at 21.

[52]Giganet at 5.

B. Relaxed LMDS Operating Standards Should Be Adopted

Revisions are also proposed that are intended to facilitate deployment and operation of LMDS systems.[53] In general, these proposals are acceptable. However, the Commission should ensure that implementation of these relaxed standards does not increase the incidence of harmful interference. It should discourage licensees from automatically defaulting to the new standard, because they are the least stringent possible.

In its comments, Alcatel recommended that the 1 MHz bandwidth used to measure out-of-band emissions for digital radios under Section 101.111(a)(2)(ii) is not required to include any of the authorized bandwidth being tested.[54] Support for this recommendation exists because it would promote increased FS frequency availability by optimizing spectrum efficiency, facilitating product development and preserving adequate safeguards against harmful interference to protected operations.[55] The Commission therefore should incorporate this change into Section 101.111.

FS SPECTRUM SHOULD NOT BE AUCTIONED

In the NPRM, the Commission seeks comment on how it might modify Part 101 general licensing to ensure that it satisfies the Balanced Budget Act of 1997 ("BBA")[56]

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[53]NPRM, 15 FCC Rcd at 3156-58.

[54]Alcatel at 26-28.

[55]NSMA at 18-19; FWCC at 20-21.

[56]Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251.

requirement to auction all mutually exclusive ("MX") partial license applications.[57] The record clearly condemns using auctions for FS links.

This opposition exists for several reasons. Auctions are not authorized for FS site-by-site licensing under the BBA, they are impractical for such systems and they would significantly harm operations without improving a viable licensing process.[58]

A. FS Auctions Are Not Authorized Under the BBA

Axiomatic to the BBA is the requirement that auctions only are available after "engineering solutions, negotiation, threshold qualifications, service regulations, and other means [are used] in order to avoid mutual exclusivity in application and licensing proceedings."[59] As UTC and numerous other commenters document, subjecting FS site-by-site systems to auctions would not meet this statutory requirement:

> The Commission proposal to license microwave services through competitive bidding operates from the false-premise that the Commission has the authority to do so. Section 309(j) only authorizes competitive bidding for mutually exclusive applications for initial licenses or construction permits. As the Commission acknowledges in the *Notice of Proposed Rule Making* "under the current licensing scheme, mutually

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[57] NPRM, 15 FCC Rcd at 3166-68. Specifically, the Commission proffers four (4) options for addressing the auction requirement with respect to the FS: Option I - license Part 101 microwave spectrum based upon an appropriate channelization plan and geographic service area through use of auctions to choose among MX applications (similar to approach in 38 GHz Band); Option II - relocate licensees so that spectrum is clear for licensing by auction, provided that a "home" for the displaced licensees could be located (similar to 2 GHz band PCS); Option III - identify certain bands where incumbents could retain co-primary status and other bands where incumbents would have secondary status (similar to 31 GHz band LMDS licensing); and Option IV - retain current approach, utilizing various channelization plans and site-by-site licensing, but using auctions to resolve MX applications. Id.

[58] NSMA also supports preserving the BBA exemption from auctions for public safety entities. Accord APCO at 9-11; CPRA at 3-4; LAC at 3-5; Long Beach at 5; Riverside at 3-5.

[59] 47 U.S.C. § 309(j)(6)(E) (2000).

> exclusive situations rarely if ever occur. This is so because microwave services are currently licensed on a site-by-site basis and because applicants must obtain frequency coordination of proposed facilities prior to filing an application with the Commission. Hence, the current licensing scheme would not trigger the Commission's authority to auction spectrum for microwave services.[60]

Comsearch warns that "[b]y changing from a site-by-site licensing scheme to a geographic licensing scheme for microwave spectrum, the Commission would be introducing the very mutual exclusivity that it is charged with avoiding under the law, and would be throwing away a system of 'engineering solutions' that the Commission admits is working."[61] APCO strongly opposes this approach because it

> would create a great level of uncertainty for equipment vendors in these bands because the band plans and technical parameters for the use of the spectrum could change at the whim of the new licensee. The design and development of equipment requires stable standards to be in place. Any changes would require additional time to develop new standards in order to protect the incumbent systems from harmful interference. This could ultimately harm public safety users because it could reduce equipment availability and increase the cost of equipment.[62]

B. Auctions Unnecessarily Would Harm Site-by-Site FS Licensing

The record unambiguously reflects that the current licensing process for site-by-site FS systems works quite well and does not require "fixing." Indeed, introducing auctions would likely destroy an increasingly effective, timely, and user-friendly process.

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[60]UTC at 3-4 (footnotes and citations omitted). See also API at 16 (footnote omitted) ("site-by-site licensing scheme in the POFS point-to-point bands serves the public interest and should be continued"); Radscan at 2; NSMA at 20-21; FWCC at 21-24; Alcatel at 30-31; Stratos at 5-6.

[61]Comsearch at 9.

[62]APCO at 6-7.

NSMA, in its comments, accurately characterized how the existing licensing process is successful:

> The existing frequency coordination process works and assures virtually no MX applications will be filed. Carriers depend upon microwave facilities because, under this licensing procedure, such facilities can be constructed and made operational rapidly. Auctions would ruin a licensing procedure that does not need to be changed and that would result in significant delay.[63]

Stratos agrees:

> The proposals have the potential of disrupting the vital communications used by major industries throughout the U.S., including the oil and gas industry, transportation industry, electric utility industry and others that rely upon microwave services to provide "mission critical" communications.
>
> *****
>
> Stratos Offshore believes that the current licensing process is working and the Commission should refrain from doing anything that could jeopardize this success. To the extent that the Commission believes that a change is necessary, Stratos Offshore believes that the only viable option is for the Commission to retain site-by-site licensing for microwave applications and conduct auctions only when there is mutual exclusivity. This approach is consistent with the Balanced Budget Act, will not disrupt vital incumbent uses of the microwave spectrum, and ensures that incumbent licensees have the ability to expand their systems.[64]

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[63]NSMA at 20. See also FWCC at 23; Alcatel at 30-31.

[64]Stratos at 2.

C. Any Proposed FS Relocation To Increase Spectrum Available For Auctions Is Unacceptable

Under the proposed Option II, the Commission would, once again, relocate FS users, to clear available operations for auctions.[65] A serious flaw exists with this proposal. Inadequate replacement spectrum for FS users exists.

This shortage is acknowledged by the Commission in the NPRM, as it describes potential replacement bands as being "significantly encumbered, particularly in urban areas" and it further notes that the "relocation of 2 GHz microwave licensees into the 6 GHz and 11 GHz bands has further burdened this spectrum."[66]

The record amplifies the Commission's skepticism. API wonders whether a "suitable 'spectrum home' could be found should another sizeable Fixed Service band be rededicated for new services and/or placed on the auction block."[67] APCO warns that, "[a]side from imposing potential cost on taxpayers, relocation of incumbents would be contrary to the public interest as there is a lack of sufficient alternative spectrum."[68] Other carriers, such as LAC and Stratos, provide anecdotal evidence that such fears are justified.[69]

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[65]NPRM, 15 FCC Rcd at 3167.

[66]Id., 15 FCC Rcd at 3166.

[67]API at 17. See also FWCC at 23-24.

[68]APCO at 7.

[69]LAC at 4 ("[t]he County recently went through the relocation process in the 2 GHz band, and found it very difficult to find replacement frequencies in the spectrum-congested Los Angeles area"); Stratos at 10-11 ("Significantly, incumbent microwave licensees operating the 2 GHz band have not completed the process of relocating to other bands in order to accommodate PCS. To initiate further relocation would only be a further disruption to these microwave licensees.").

ADOPTION OF PROPOSED RULES FOR 10 GHz BAND OPERATIONS AND PART 74 DIGITAL TRANSMISSIONS ALSO WOULD SERVE THE PUBLIC INTEREST

Several parties, in their comments, recommend revising the maximum allowable EIRP for the 10 GHz Band to avoid problems with longer paths and instituting a rulemaking to revise Part 74 so that broadcast support operations can utilize digital technologies more readily.[70] In the NPRM, however, neither proposal is included. For the reasons set forth below, the Commission should ensure that these proposals are adopted.

A. The EIRP for the 10.60-10.68 GHz Band Should Be Modified

The Commission's proposal, to reduce the Maximum Allowable EIRP for the 10.6-10.68 GHz band from +55 dBW to +40 dBW,[71] is inappropriate. It would reduce the EIRP limit for the entire 10.55-10.68 GHz band to +40 dB.[72]

> This lower EIRP limit would restrict the maximum antenna size and make the band difficult to use for long paths relocated from the 2 GHz band. Thus, more power would be required in the 10 GHz Band to compensate since the band is affected by rain outage.
>
> *****
>
> The +40 dBW maximum EIRP would limit the maximum antenna size to a 6 foot diameter in this example. If the Commission wants to limit the EIRP, it should change the maximum EIRP for the 10 GHz Band in Section 101.113(a) from 55 dBw to 45 dBW. This change would allow up to a 10 foot diameter dish at each station. Antenna sizes of 10 foot will

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[70]NSMA at 21; FWCC at 26; Alcatel at 31.

[71]NPRM, 15 FCC Rcd at 3153.

[72]See NSMA at 21.

> provide adequate system gain for most FS applications in the 10 GHz band.[73]

As an alternative, NSMA, Alcatel and others propose that the following footnote should be added to the EIRP limit for the 10.55-10.68 GHz band in Section 101.113(a):

> Transmitters licensed after [effective date] shall not exceed an EIRP limit of 40 dBW. ATPC power reduction may be used to meet the 40 dBW EIRP limit for transmitters with an EIRP between 40 dBW and 55 dBW.

This alternative rule change should be adopted because it "would maintain the current 55 dBW EIRP limit, but would require systems to reduce their power to the 40 dBW level using Automatic Transmit Power Control .... Transmitters only would exceed the 40 dBW level during short periods of multipath or rain fading."[74]

B. The Commission Promptly Should Initiate A Rulemaking to Revise Part 74

Specific changes in the Television Broadcast Auxiliary Service must be made to ensure that digital transmission technologies can be utilized fully because the Part 74 rules only permit analog modulation.[75] SBE, Alcatel and many others support this proposal.[76]

> It is critical that technical standards be prescribed to ensure the reliability of all digital paths. Specific technical rules in this service, such as digital modulation, maximum EIRP for short paths, and ATPC, will support and promote HDTV over microwave paths.

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[73]Alcatel at 32-33.

[74]Alcatel at 33; NSMA at 22; FWCC at 28.

[75]Alcatel at 33-34; NSMA at 23-24; FWCC at 28-29.

[76]SBE at 5-6; Alcatel at 33-34; NSMA at 23-24; FWCC at 28-29.

* * * * *

> Broadcasters, therefore, are unable to install new digital radios to carry HDTV. If broadcasters cannot get digital television signals from the studio to the transmitter, they cannot provide digital television service.

* * * * *

> This problem is not speculative. Certain broadcasters at the forefront of providing HDTV have been frustrated because the Commission will not grant applications for digital STL links. Anything but prompt action on this proposal threatens a successful HDTV roll-out.[77]

CONCLUSION

A compelling need exists for expanding access to FS spectrum. The proposals in the NPRM to increase 23 GHz Band and 10 GHz Band access, if adopted, would accomplish this goal.

The record of this proceeding sends a clear message to the Commission -- the proposals to re-channelize the 23 GHz Band, update its technical and operating standards, promote 23 GHz Band conditional licensing, and relax antenna and LMDS standards -- all are in the public interest and must be incorporated into the rules. Equally as clear is the resounding veto to the proposed use of auctions for FS site-by-site licensing.

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[77] Alcatel at 34.

Given this strong consensus, the Commission has no choice but to take these actions. To do otherwise would ignore the record of this rulemaking, would be arbitrary and capricious, and would disserve the public interest. Thus, the NSMA requests that the Commission expeditiously adopt these new rules.

Respectfully submitted,

NATIONAL SPECTRUM MANAGERS ASSOCIATION

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August 3, 2000

Attachment A

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California Public-Safety Radio Association ("CPRA")
City of Long Beach ("Long Beach")
Comsearch
Consolidated Spectrum Services ("Consolidated")
County of Los Angeles ("LAC")
County of Riverside ("Riverside")
DIRECTV, Inc.
EchoStar Stellite Corporation
Fixed Wireless Communications Coalition ("FWCC")
Giganet Wireless Systems, Inc. ("Giganet")
Motorola, Inc. ("Motorola")
National Spectrum Managers Association ("NSMA")
Nextel Communications, Inc. ("Nextel")
Radscan, Inc. ("Radscan")
Satellite Broadcasting and Communications Association
Satellite Industry Association
Society of Broadcast Engineers, Inc. ("SBE")
Stratos Offshore Services Company ("Stratos")
Telenetics Corporation/Southwest Microwave, Inc. ("Telenetics/SMI")
Triton Network Systems, Inc. ("Triton")
United Telecom Council ("UTC")
Winstar Communications, Inc. ("Winstar")

CERTIFICATE OF SERVICE

I, Karen Adams, a secretary in the law firm of Gardere & Wynne, LLP, hereby certify that, on the 4th day of August, 2000, a true and correct copy of the foregoing Reply Comments will be sent via first class mail, postage prepaid, to the following:

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August 3, 2000